CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

ORDER NO. 84-77
NPDES No. CA0037648

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

CENTRAL CONTRA COSTA SANITARY DISTRICT
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, (hereinafter called the Board) finds that:

1. Central Contra Costa Sanitary District (hereinafter called the discharger), submitted a Report of Waste Discharge dated January 30, 1984 for reissuance of NPDES Permit No. CA0037648.

2. The discharger is operating an activated sludge plant which had a rated capacity of 35.0 mgd. This plant treats domestic and industrial wastewater from Central Contra Costa County. Treatment consists of primary sedimentation, activated sludge secondary treatment, secondary clarification, disinfection, and dechlorination. Waste activated sludge is returned to the primary sedimentation facilities and settles with the primary sludge. Lime is added to a portion of the primary influent to aid in settling primary and waste activated sludges. The combined primary and waste activated sludges are dewatered by centrifuge and either incinerated in multiple hearth furnaces, or as an interim measure until furnace repairs or modifications are completed, disposed of in a permitted land disposal site. Ash produced in the incineration process will also be disposed of in a permitted land disposal site. The treated wastewater is discharged into Suisun Bay, a water of the State and United States through a submerged diffuser about 1600 feet offshore at a depth of 24 feet below mean lower low water. [Latitude 38 deg., 2 min., 44 sec.] [Longitude 122 deg., 5 min., 55 sec.]

3. The discharger presently discharges an average dry weather flow of 35.0 mgd. However, consistent compliance has been demonstrated in past years.

4. Based on the highest historical population growth rate within the discharger's service area, the wastewater flow will approach 38 mgd by the time the expansion project described in Finding No. 6 is completed in July 1986.

5. The capacity of each individual unit process was reassessed in a study to determine the overall rated treatment capacity. Secondary clarifiers were

identified as the limiting components. However, under present flow configuration, secondary and final clarifiers are operated in series, therefore, final clarifiers provide auxiliary solids removal and have increased the effective capacity of the clarifiers. As a result of this study, the capacity is currently rated to be 38 mgd.

6. The discharger is currently pursuing an expansion project which should result in an increase in treatment capacity from 38 mgd to 45 mgd by July, 1986. The expansion project will provide capacity for the year 2000 population of 451,500 based on Association of Bay Area Governments "Projections '79". Pursuant to existing environmental plans and grant conditions, the discharger may not discharge an average dry weather flow in excess of 45 mgd unless local, regional and state or federal environmental review for additional flow and its affiliated growth effects is satisfactorily completed.

7. The discharger has reported that, for several years, modification of existing facilities at the treatment plant were difficult because of a legal dispute involving the design engineer, construction contractor, and the discharger. The settlement of this dispute has reached a point where necessary modifications or improvements may be undertaken by the discharger. Future delay of these improvements due to the legal dispute is not anticipated.

8. The discharger receives alum sludge from Contra Costa Water District. The sludge is pumped into two ponds lying north and east of the discarger's treatment plant. The supernatant is returned to the headworks of the plant. The remaining solids are air dried and disposed of in a permitted land disposal site.

9. The discharge is presently governed by Waste Discharge Requirements, Order No. 79-77, which allow discharge into Suisun Bay.

10. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for Suisun Bay and contiguous waters.

11. The beneficial uses of Suisun Bay and contiguous water bodies are:

- o Water Contact and Non-Contact Water Recreation
- o Wildlife Habitat
- o Preservation of Rare and Endangered Species
- o Fish Migration and Spawning
- o Industrial Service Supply
- o Navigation
- o Commercial and Sport Fishing

12. An Operations and Maintenance Manual is maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities and recommended operating strategies, process control monitoring and maintenance activities. In order to remain a useful and relevant document, this manual should be kept updated to reflect significant changes in plant facilities or activities.

13. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 2100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

14. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. Bypass or overflow of untreated or partially treated wastewater to waters of the State either at the treatment plant or from any of the collection system and pump stations tributary to the treatment plant is prohibited.

2. The average dry weather flow shall not exceed 38.0 mgd. Upon completion of the expansion project and the upgraded facilities, and demonstration of compliance to the satisfaction of Regional Board Executive Officer, the average dry weather flow shall not exceed 45.0 mgd. Average shall be determined over three consecutive dry months each year.

3. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

B. Effluent Limitations

1. Effluent discharged shall not exceed the following limits:

Constituents	Units	30-day Average	7-day Average	Maximum Daily	Instantaneous Maximum
a. Settleable Matter	ml/l-hr	0.1	-	-	0.2
b. BOD_5 or	mg/l	30	45	60	-
Carbonaceous BOD(1)	mg/l	25	40	50	-
c. Total Suspended Solids	mg/l	30	45	60	-
d. Oil & Grease	mg/l	10	-	20	-
e. Total Chlorine Residual (2)	mg/l	-	-	-	0.0

(1) Effective upon its promulgation in a new secondary treatment definition.

(2) Requirement defined as below the limit of detection in standard test methods.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20 degree centrigrade) and suspended solids values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

3. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

4. The survival of test organisms acceptable ot the Executive Officer in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival based on the ten most recent consecutive samples.

5. Representative samples of the effluent shall not exceed the following limits:(1)

Constituent	Unit of Measurement	6-month Median	Daily Maximum
Arsenic	mg/l	0.01	0.02
Cadmium	mg/l	0.02	0.03
Total Chromium	mg/l	0.005	0.01
Copper	mg/l	0.2	0.3
Lead	mg/l	0.1	0.2
Mercury	mg/l	0.001	0.002
Nickel	mg/l	0.1	0.2
Silver	mg/l	0.02	0.04
Zinc	mg/l	0.3	0.5
Cyanide	mg/l	0.1	0.2
Phenolic Compounds	mg/l	0.5	1.0
Total Identifiable Chlorinated Hydrocarbons(2)	mg/l	0.002	0.004

(1) These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

(2) Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

6. The running median value for the MPN of total coliform in any five (5) consecutive effluent samples shall not exceed 240 coliform organisms per 100 milliliters. Any single sample shall not exceed 10,000 MPN/100 ml.

C. Land Disposal Requirements

1. The handling, treatment and storage of alum sludge shall not cause sludge to be in any position where it is , or can be carried from Land Disposal Site "L-1" and "L-2" (see Attachment A) and deposited in waters of the State.

2. Land Disposal Site "L-1" and "L-2" shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage of the materials from the disposal site.

3. The disposal of Group 1 material as defined in the California Administrative Code, Article 3, Section 2520, in Land Disposal Site "L-1" and "L-2" is prohibited.

D. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the folowing limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	7.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentration (s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum.
c.	pH	Variation from natural ambient pH by more than 0.2 pH units.
d.	Un-ionized ammonia	0.025 mg/l as N Annual Median 0.4 mg/l as N Maxium

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

1. The requirements prescribed by this Order supersede the requirements prescribed by Order No. 79-77. Order No. 79-77 is hereby rescinded.

2. Where concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply as follows:

   Mass Emission Limit in (lbs/day) = Concentration limit in mg/l x (8.34) x Actual Flow in mgd averaged over the time interval to which the limit applies.

3. The discharger shall comply with all sections of this Order immediately upon adoption.

4. The discharger shall review and update his Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year. Documentation of operator input and review shall accompany each annual update.

5. The discharger shall review and update by December 31 annually its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

6. The discharger shall comply with Order No. 84-60 for implementation of its pretreatment program.

7. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

8. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977. Standard Provision C.2 is revised to read as follows:

   2. The "30-day, or 7-day, average" discharge is the total discharge by weight during 30, or 7, consecutive calendar day periods, respectively, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the 30-day, or 7-day, average discharge shall be determined by the summation of all the measured discharges by weight divided by the number of days during the 30, or 7, consecutive calendar day period when the measurements were made. For other than 7-day or 30-day periods, compliance shall be based on the average of all measurements made during the specified period.

9. This Order expires October 17, 1989. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

10. This order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on October 17, 1984.

Roger B. James
Executive Officer

Attachments:

Attachment A
Standard Provisions & Reporting Requirements, April 1977
Self-Monitoring Program
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Central Contra Costa Sanitary District

Contra Costa County

NPDES NO. CA0037648

ORDER NO. 84-77

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the treatment facilites headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present. (May be the same as E-001-D.)
E-001-D	At any point in the disinfection facilities for Waste E-001 at which point adequate contact with the disinfectant is assured.
E-001-S	At any point in the disposal facilities following dechlorination.

C. RECEIVING WATERS

Station	Description
C-1	At a point in Suisun Bay, located within 25 feet of the point of discharge from the outfall diffuser section.
C-2	At a point in Suisun Bay, located 100 feet generally west from the diffuser section of the outfall line.
C-3	At a point in Suisun Bay, located 100 feet generally north from the offshore end of the diffuser section of the outfall line.
C-4	At a point in Suisun Bay, located 100 feet generally east from the diffuser section of the outfall line.

C-5	At a point in Suisun Bay, located 100 feet generally south from the shoreward end of the diffuser section of the outfall line.
C-R	At a point in Suisun Bay, located 1,000 feet up current from the diffuser section of the outfall line in waters of the same depth (-5 feet) as station C-1 and not located in the dredged channel.

D. LAND OBSERVATIONS

Station	Description
P-1 thru P-'n'	Located along the periphery of the waste treatment facilities at equidistant intervals, not to exceed 200 feet. (A sketch showing the locations of these stations will accompany each report.)
L-1 thru L-'n'	Located along the perimeter levee of lagoons and drying beds at equidistant intervals not to exceed 300 feet. (A sketch showing the locations of these stations will accompany each report.)

E. OVERFLOWS AND BYPASSES

Station	Description
OV-1 through OV-'n'	Bypass or overflows from manholes, pump stations or collection system owned, operated, or maintained by permittee. Note: Initial SMP report to include map and description of each known bypass or overflow location. Reporting - Shall be submitted monthly and include date, time, and period of each overflow or bypass.

F. MISCELLANEOUS REPORTING

1. The monthly average percent removal of suspended solids and BOD_5 shall be calculated using influent and effluent mass emissions, rather than concentrations.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table I.

III. MODIFICATIONS OF PART A

A. The Self-Monitoring Program does not include the following paragraphs of Part A:

C.3., C.4, C.5.a.4., C.5.a.6., C.5.c, C.5.d.4.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 84-77.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

Roger B. James
Executive Officer

Effective Date October 17, 1984

Attachment:

Table I

PART B

TABLE 1 (1), (3), (4), (5)

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION	A-001	E-001		E-001-D		E-001-S			All C Sta	L	O	P	Misc. Obsv.
TYPE OF SAMPLE	C-24	G	C-24	G	Cont	G	C-24	Cont	G	O	O	O	
Flow Rate (mgd)	D		D										
BOD_5, 20^oC, or COD (mg/l & kg/day)	5/W		5/W										
Chlorine Residual & Dosage (mg/l & kg/day)				2H	or Cont	2H	or	Cont					
Settleable Matter (ml/l-hr. & cu. ft./day)				D									
Total Suspended Matter (mg/l & kg/day)	5/W		5/W										
Oil & Grease (2) (mg/l & kg/day)	2W	2W											
Coliform (Total or Fecal) (MPN/100 ml) per req't				5/W									
Fish Toxicity, 96-hr. TL_{50} % Survival in undiluted waste							2/M						
Ammonia Nitrogen & Un-ionized Ammonia (mg/l & Kg/day) (6)			W						3M				
Nitrate Nitrogen (6) (mg/l & kg/day)			M										
Nitrite Nitrogen (6) (mg/l & kg/day)			M										
Total Organic Nitrogen (6) (mg/l & kg/day)			M										
Total Phosphate (6) (mg/l & kg/day)			M										
Turbidity (Jackson Turbidity Units)			W						3M				
pH (units)				D					3M				
Dissolved Oxygen (mg/l and % Saturation)				D					3M				
Temperature (^oC)				D					3M				
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)				E									
Arsenic (mg/l & kg/day)			3M										
Cadmium (mg/l & kg/day)			3M										
Chromium, Total (mg/l & kg/day)			3M										
Copper (mg/l & kg/day)			3M										
Cyanide (mg/l & kg/day			3M										
Silver (mg/l & kg/day			3M										
Lead (mg/l & kg/day)			3M										

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION	A-001	E-001		E-001-D		E-001-S			All C Sta	L	O	P	Misc. Obsv.
TYPE OF SAMPLE	C-24	G	C-24	G	Cont	G	C-24	Cont	G	O	O	O	O
Mercury (mg/l & kg/day)			3M										
Nickel (mg/l & kg/day)			3M										
Zinc (mg/l & kg/day)			3M										
Phenolic Compounds (mg/l & kg/day)			3M										
All Applicable Standard Observations		D							3M	M	E	2/W	
Bottom Sediment Analyses and Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)			3M										
Iron													
Dewatered Sludge (7)													D

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling

O = observation

TYPES OF STATIONS

A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations

L = basin and/or pond levee stations

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/Y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 month
Cont = continuous

1/ During any day when bypassing occurs form any treatment unit(s) in the plant or to the emergency outfall, the monitoring program for the effluent and any nearshore discharge shall include the following in addition to the above schedule for sampling, measurement and analyses:

a. Composite sample for BOD and Total Suspended Solids. (Influent and Effluent)

b. Grab samples for Total Coliform, Settleable Matter, Oil and Grease, and Chlorine Residual (continuous or every two hours).

c. Continuous monitoring of bypassed flow.

2/ Oil and Grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day with each grab being collected in a glass container and analyzed separately. Results for station E-001 shall be expressed as a weighted average of the 3 values, based upon the instantaneous flow rates occurring at the time of each grab sample.

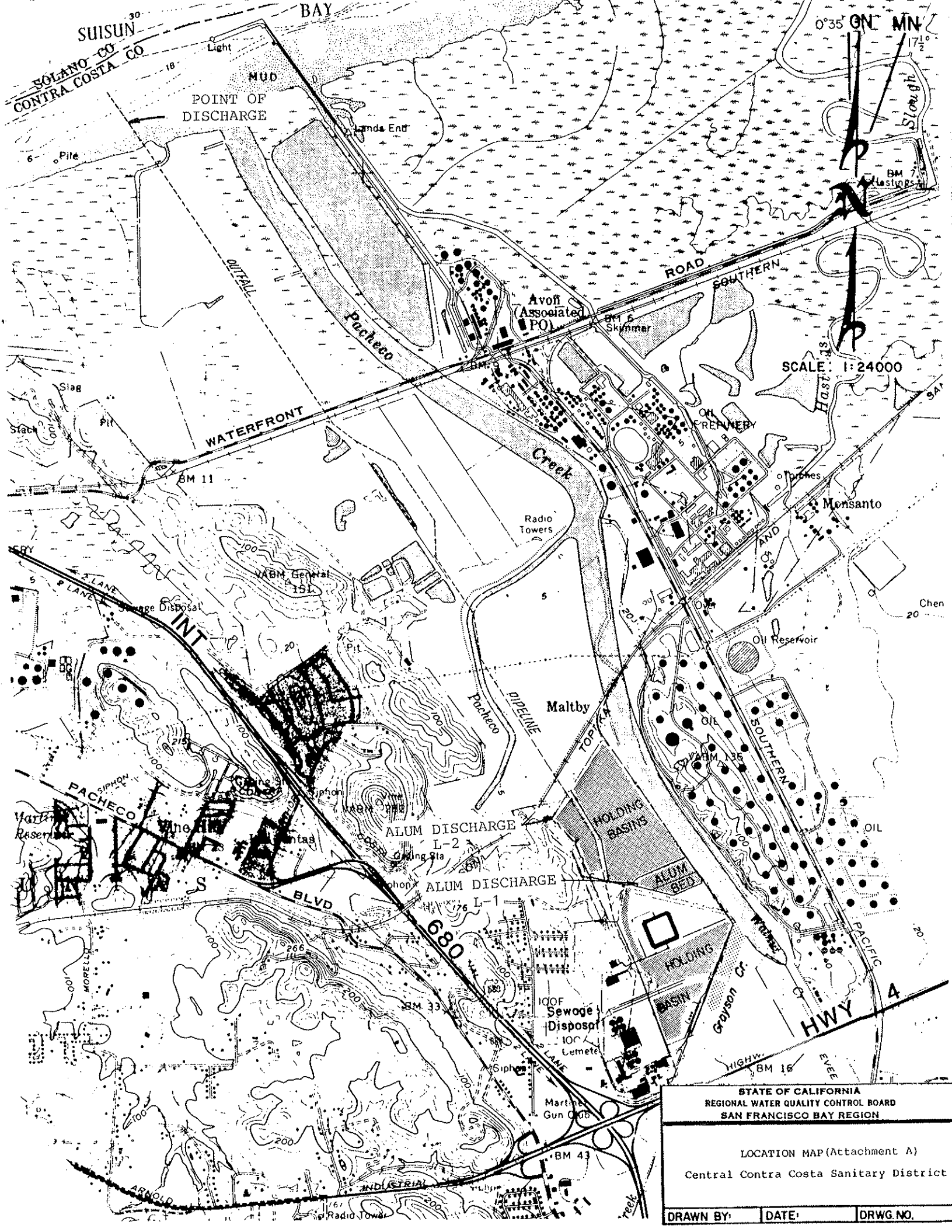
3/ Grab sample shall be taken on day(s) of composite sampling.

4/ If any sample is in violation of limits, sampling shall be increased for that parameter to weekly until compliance is demonstrated in two successive samples.

5/ Data shall be reported using the forms provided or approved equivalent. Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved.

6/ These parameters shall be tested for on the same composite sample used for the bioassy.

7/ Daily records shall be kept of the quantity and solids content of the dewatered sludge disposed of and the location of disposal.



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

LOCATION MAP (Attachment A)

Central Contra Costa Sanitary District

DRAWN BY:	DATE:	DRWG. NO.